

Exemption No. 5587A

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

Jetstream Aircraft Limited

Regulatory Docket No. 27001

for an exemption from §§ 25.562(c)(5) and 25.785(a) of the
Federal Aviation Regulations

PARTIAL GRANT OF EXEMPTION

By letter AWP/JS41/250/2667 dated December 6, 1993, R.D. Evans, Chief Airworthiness Engineer, Jetstream Aircraft Limited (formerly British Aerospace Regional Aircraft Limited), Prestwick Airport, Ayrshire KA9 2RW, Scotland, petitioned for an extension to Exemption 5587 regarding the Head Injury Criterion (HIC) of §§ 25.562(c)(5) and 25.785(a) of the Federal Aviation Regulations (FAR), for front row passenger seating in Jetstream Series 4100 airplanes, until December 31, 1994. The existing exemption expires on December 31, 1993.

Sections of the FAR affected:

Section 25.785(a) requires that each seat, berth, safety belt, harness, and adjacent part of the airplane at each station designated as occupiable during takeoff and landing must be designed so that a person making proper use of those facilities will not suffer serious injury in an emergency landing as a result of inertia forces specified in §§ 25.561 and 25.562.

Section 25.562(c)(5) requires that each occupant must be protected from serious head injury under the conditions prescribed in paragraph (b) of this section. Where head contact with seats or other structure can occur, protection must be provided so that the head impact does not exceed a Head Impact Criterion (HIC) of 1,000 units. The level of HIC is defined by the equation:

$$HIC = \left[(t_2 - t_1) \left[\frac{1}{(t_2 - t_1)} \int_{t_1}^{t_2} a(t) dt \right]^{2.5} \right]_{\max}$$

ANM-94-006-E

The petitioner's supportive information is as follows:

Despite persistent and continuing efforts, Jetstream Aircraft has been unable to develop front row passenger seating that complies with HIC requirements. Although Jetstream has made some progress, as documented in quarterly status reports submitted to the FAA under the terms of Exemption 5587, they petitioned that additional time is needed to continue developmental work.

Jetstream has delayed submitting this request for extension because it was hopeful that technical solutions would be found prior to the December 31, 1993, deadline imposed by Exemption 5587. In consideration of that effort, Jetstream requests that the comment procedures of § 11.27(j)(3) and the § 11.25(b)(1) requirement for petition submission of at least 120 days prior to the proposed effective date of this rulemaking activity be waived.

The FAA finds, for good cause, that action on this petition should not be delayed by publication and comment procedures for the following reasons: (1) a grant of exemption would not set a precedent in that it is for a time extension from a requirement and not permanent relief from the requirement and therefore would not create a public safety issue, and (2) a delay in acting on the petition would be disruptive to the flying public and create a major economic burden on the manufacturer and operators.

The FAA's analysis/summary is as follows:

Exemption 5587 was issued on January 13, 1993, and was based on a lack of "commercially desirable" solutions to the HIC certification requirement. The FAA concurred with the petitioner's December 31, 1993, requested expiration date for that exemption, as appropriate to allow sufficient development time without unduly delaying implementation of this new safety requirement benefiting passengers seated behind bulkhead structures.

The FAA considers that Jetstream Aircraft has made a good-faith effort to observe the terms of that exemption, having engaged in developmental efforts and by documenting this activity in quarterly status reports. Although there do not appear to be any insurmountable problems that would preclude achieving the desired solutions, the FAA concurs that this is not likely prior to December 31, 1993. Accordingly, an extension would not adversely affect the level of safety permitted by the exemption, and would allow completion of the research required to achieve the sought-after commercially desirable solutions for front-row seat passenger protection.

In consideration of the foregoing, I find that a partial grant of exemption is in the public interest, and will not significantly affect the overall level of safety provided by the regulations. Therefore, pursuant to the authority contained in §§ 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of Jetstream Aircraft Limited for an extension to Exemption 5587 regarding the HIC requirements of §§ 25.562(c)(5) and 25.785(a) of the FAR, for front row passenger seats on Jetstream Series 4100 airplanes, is granted until December 31, 1994, or until a HIC design solution is developed and may be expeditiously installed, whichever comes first. Other provisions of Exemption 5587, together with its conditions and limitations, remain the same and are applicable to this exemption. This amendment is part of, and shall remain attached to, Exemption 5587.

Issued in Renton, Washington, on

Darrell M. Pederson
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service

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